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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/554,073	10/24/2005	Andras Kalmar	1454.1634	6573
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STAAS & HALSEY LLP			KAO, JUTAI	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/554,073	KALMAR ET AL.
	<b>Examiner</b>	<b>Art Unit</b>
	Ju-Tai Kao	2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 9-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_ is/are allowed.
- 6) Claim(s) 9-16 is/are rejected.
- 7) Claim(s) \_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 10/24/2005.
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) Notice of Informal Patent Application
- 6) Other: \_\_\_\_.

## DETAILED ACTION

### *Drawings*

1. The subject matter of this application admits of illustration by a drawing to facilitate understanding of the invention. Applicant is required to furnish a drawing under 37 CFR 1.81(c). No new matter may be introduced in the required drawing. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d).

The drawings must show every feature of the claimed invention.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claim 9-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lund (UA 2006/0153069) in view of Iacovino (US 2004/0085954) and Kawase (US 5,631,896).

Lund discloses a method for line and path selection within SONET/SDH based networks including the following features.

Regarding claim 9, a method for protection switching (see "should a particular network line...fail...the network is designed to "switch over" to another network line" recited in paragraph [0004]) and monitoring (see "a failure or degradation of the working line...is detected" recited in paragraph [0006]) in a data transmission system (see SONET and SDH recited in paragraph [0004]) by transmitting a working multiplex signal over a working connection and a protection multiplex signal over a protection connection between network elements (see "schemes include 1+1...classify a network line as either a working line or a protection line" recited in paragraph [0005]; also see "time division multiplexed (TDM) streams of primary and secondary traffic..." recited in paragraph [0064]) and at least one of multiplex signal protection switching between the working and protection multiplex signals (see "Line Level Protection" recited in paragraph [0060]) and path protection switching between path signals (see "Path Level Protection" recited in paragraph [0119]) along with monitoring performance of selected path signals (see Fig. 10C item 1060, which shows a monitoring of a signal being down, and 1062 which performs the protection at the path level), comprising: dividing the work

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multiplex signal into working path signals and the protection multiplex signal into protection path signals (see Fig. 10A, having line signal 1003 being divided into corresponding path STS1 signals).

Regarding claim 15, a system for protection switching (see "should a particular network line...fail...the network is designed to "switch over" to another network line" recited in paragraph [0004]) and monitoring (see "a failure or degradation of the working line...is detected" recited in paragraph [0006]) in a data transmission system (see SONET and SDH recited in paragraph [0004]) by transmitting a working multiplex signal over a working connection and a protection multiplex signal over a protection connection between network elements (see "schemes include 1+1...classify a network line as either a working line or a protection line" recited in paragraph [0005]; also see "time division multiplexed (TDM) streams of primary and secondary traffic..." recited in paragraph [0064]) and at least one of multiplex signal protection switching between the working and protection multiplex signals (see "Line Level Protection" recited in paragraph [0060]) and path protection switching between path signals (see "Path Level Protection" recited in paragraph [0119]) along with monitoring performance of selected path signals (see Fig. 10C item 1060, which shows a monitoring of a signal being down, and 1062 which performs the protection at the path level).

Lund does not disclose the following features: regarding claim 9, the method comprising: routing the working path signals and the protection path signals to only one switching device both for multiplex signal protection switching and for path protection switching; switching all path signals for the multiplex signal protection switching;

monitoring performance of the working path signals and the protection path signals before the switching device; accumulating performance values of at least one of the working path and associated protection path signals; and determining a resulting performance value when a monitoring period ends; regarding claim 10, wherein said monitoring of performance is undertaken separately for the working path signal in a working performance monitoring device and in a protection performance monitoring device for a corresponding protection path signal; regarding claim 11, wherein said monitoring comprises checking a plurality of protection connections; regarding claim 12, wherein said monitoring comprises checking only specific parts of at least one of the working multiplex signals and lower granularity path signals; regarding claim 13, wherein said monitoring comprises alarm monitoring of the working path signals and the associated protection path signals before the switching device, and passing on alarm criteria of each signal selected; regarding claim 14, comprising changing an alarm criterion of one of a newly selected working path signal and a newly selected protection path signal after protection switching and a checking time has elapsed; regarding claim 15, wherein the system comprising: only one switching device to which the working path signals are routed over working path lines and the protection path signals are routed over protection path lines, with the multiplex signal protection switching being undertaken by switching all path signals; a working performance monitoring device connected to each of the working path lines; a protection performance device connected to each of the protection path lines; an accumulation device accumulating performance values of at least one of the working path signals and associated protection path

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signals; alarm monitoring devices, connected to the accumulation device, determining resulting performance value; regarding claim 16, further comprising alarm switching devices, wherein said alarm monitoring devices include working alarm monitoring devices respectively connected to the working path lines and protection alarm monitoring devices respectively connected to one of the protection path lines, where working alarm signals are routed from the working alarm monitoring devices and protected alarm signals are routed from associated protection alarm monitoring devices to the alarm switching devices respectively, and wherein each alarm switching device is activated by an alarm control to which a protection switching signal is routed and a path alarm signal of a newly selected path signal is through connected via a corresponding alarm switching device only after a checking time has elapsed.

Iacovino discloses an out-of-band signaling apparatus for an optical cross connect including the following features.

Regarding claim 9, the method comprising: routing the working path signals and the protection path signals to only one switching device both for multiplex signal protection switching and for path protection switching (see "line and path protection switching is processed at the Line module level" recited in paragraph [0053], where Fig. 3 shows the line module 520); switching all path signals for the multiplex signal protection switching (see "SONET protection typically requires line module redundancy...each STS-48 stream...is duplicated...the line module 520 then performs best copy selection between the two redundant streams" recited in paragraph [0040-0041], which describes the line protection scheme that switches the entire STS-48,

which is consisted of all 48 path level STS-1 streams); monitoring performance of the working path signals and the protection path signals before the switching device (see “monitor each STS-1 within all 64 STS-48 streams” recited in paragraph [0044], which explains the path protection; and see “real time performance monitoring of each STS-1...on the Line module 520).

Regarding claim 11, wherein said monitoring comprises checking a plurality of protection connections (see “MOS 500...monitor each STS-1 within all 64 STS-48 streams” recited in paragraph [0044]; each of the STS-1 represents a working or protection connection).

Regarding claim 12, wherein said monitoring comprises checking only specific parts of at least one of the working multiplex signals and lower granularity path signals (see “monitor incoming signals and make decisions based on the quality of the signal. The quality of the signal is generally derived from...K1, K2, B1 and/or B3 bytes” recited in paragraph [0015]).

Regarding claim 15, wherein the system comprising: only one switching device to which the working path signals are routed over working path lines and the protection path signals are routed over protection path lines (see “line and path protection switching is processed at the Line module level” recited in paragraph [0053], where Fig. 3 shows the line module 520), with the multiplex signal protection switching being undertaken by switching all path signals (see “SONET protection typically requires line module redundancy...each STS-48 stream...is duplicated...the line module 520 then performs best copy selection between the two redundant streams” recited in paragraph

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[0040-0041], which describes the line protection scheme that switches the entire STS-48, which is consisted of all 48 path level STS-1 streams); a working performance monitoring device connected to each of the working path lines; a protection performance device connected to each of the protection path lines (see "monitor each STS-1 within all 64 STS-48 streams" recited in paragraph [0044], which explains the path protection; and see "real time performance monitoring of each STS-1...on the Line module 520).

Kawase discloses a hitless path switching method including the following features.

Regarding claim 9, the method comprising: accumulating performance values of at least one of the working path and associated protection path signals (see "carry out the parity check calculation over all the bits from the first bit of the J1 byte of the preceding frame to the bit immediately before the J1 byte of the current frame" recited in column 8, line 30-43; which shows that bit error detection being accumulated from the first bit of the preceding frame to the bit immediately before the J1 byte of the current frame; also see "The bit error detection using parity checking or CRC is performed on the 0-path and the 1-path" recited in column 8, line 10-14; where the 0-path is the working path and the 1-path is the protection path); and determining a resulting performance value when a monitoring period ends (see "bit error occurrence...is determined...at the end of the latest B3 byte....it takes time interval of T1...to detect a bit error" recited in column 8, line 30-43; where T1 being the length of the period).

Regarding claim 10, wherein said monitoring of performance is undertaken separately for the working path signal in a working performance monitoring device and in a protection performance monitoring device for a corresponding protection path signal (see "a working path and a protection path are continuously monitored independently for bit errors" recited in the abstract; also see Fig. 2, with signal failure detecting circuit 16 dedicated to the working path and signal failure detecting circuit 26 dedicated to the protection path).

Regarding claim 13, wherein said monitoring comprises alarm monitoring of the working path signals and the associated protection path signals (see "error detection results as control signals S7 and S17. Alarm signals such as loss of frame...as control signals S8 and S18" recited in column 7, line 6-16) before the switching device (see Fig. 3, where the monitoring devices 53, 63, 56, 66 and 75 comes before the switching circuit 71), and passing on alarm criteria of each signal selected (see Fig. 3, alarm signals includes signals S7, S8, S17 and S18, which are passed on to the correlation monitoring circuit 75).

Regarding claim 14, comprising changing an alarm criterion of one of a newly selected working path signal and a newly selected protection path signal after protection switching (the same path is used until the protection switching, allowing a new path to be selected, whether the new path is the working path or protection path, see "the switching circuit ...selectively transmits through an output port 72 one of the line signals S4 and S14..." recited in column 7, line 63-67; wherein S4 is the working path and S14 is the protect path) and a checking time has elapsed (alarm criterion, such as the bit-

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error criteria is being updated after each checking time, as shown in the rejection made in claim 9, indicating a period of time has to elapse before bit-error can be determined, it's obvious that a change to a path newly switched to could only occur, after the switching (which occurs after the end of the previous checking period) and a checking time period, for the next bit-error check to be updated).

Regarding claim 15, a working performance monitoring device connected to each of the working path lines (see signal terminating circuit 53 and bit error detecting circuit 56 in Fig. 3); a protection performance device connected to each of the protection path lines (see signal terminating circuit 63 and bit error detecting circuit 66 in Fig. 3); an accumulation device accumulating performance values of at least one of the working path signals and associated protection path signals (see bit error detecting circuits 56 and 66 in Fig. 3 and see "carry out the parity check calculation over all the bits from the first bit of the J1 byte of the preceding frame to the bit immediately before the J1 byte of the current frame" recited in column 8, line 30-43; which shows that bit error detection being accumulated from the first bit of the preceding frame to the bit immediately before the J1 byte of the current frame; also see "The bit error detection using parity checking or CRC is performed on the 0-path and the 1-path" recited in column 8, line 10-14; where the 0-path is the working path and the 1-path is the protection path); alarm monitoring devices, connected to the accumulation device, determining resulting performance value (see bit error detecting circuits 56 and 66 in Fig. 3 and see "bit error occurrence...is determined...at the end of the latest B3 byte....it takes time interval of

T1...to detect a bit error" recited in column 8, line 30-43; where T1 being the length of the period).

Regarding claim 16, further comprising alarm switching devices (see correlation monitoring circuit 75 and switching circuit 71 in Fig. 3), wherein said alarm monitoring devices include working alarm monitoring devices respectively connected to the working path lines (see signal terminating circuit 53 and bit error detecting circuit 56 in Fig. 3) and protection alarm monitoring devices respectively connected to one of the protection path lines (see signal terminating circuit 63 and bit error detecting circuit 66 in Fig. 3), where working alarm signals are routed from the working alarm monitoring devices (see signals S7 and S8 in Fig. 3) and protected alarm signals are routed from associated protection alarm monitoring devices (see signals S17 and S18 in Fig. 3) to the alarm switching devices respectively (signals S7, S8, S17, and S18 are routed to correlation monitoring circuit 75), and wherein each alarm switching device is activated (see "The correlation monitoring circuit 75 determines whether the switching between the working path and the protection path should be carried out" recited in column 7, line 57-62, which activates the switching circuit to perform the switching as shown in "the switching circuit ...selectively transmits through an output port 72 one of the line signals S4 and S14..." recited in column 7, line 63-67; wherein S4 is the working path and S14 is the protect path) by an alarm control (see correlation monitoring circuit 75 in Fig. 3) to which a protection switching signal is routed (also S21 in Fig. 3) and a path alarm signal of a newly selected path signal (path alarm signal is represented by signals S7, S8, S17 and S18 in Fig. 8) is through connected via a corresponding alarm switching device only

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after a checking time has elapsed (the bit-error signals S8 and S18 are only generated after a checking time period has elapsed as shown in the rejection made in claim 15, thus path alarm signal of a newly selected path signal would only be sent, and thus connected to the switching circuit 71, in the form of switching control signal S21, after the checking period has elapsed).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Lund using features, as taught by Iacovino and Kawase, in order to reduce path level transmission errors.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ju-Tai Kao whose telephone number is (571)272-9719. The examiner can normally be reached on Monday ~Friday 7:30 AM ~5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang Yao can be reached on (571)272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ju-Tai Kao



KWANG BIN YAO  
SUPERVISORY PATENT EXAMINER

